

REMARKS

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Claims 2, 7-11 and 25-31 are pending herein.

1. Claims 2, 7-11 and 25-31 were rejected under Section 103 over Iijima et al. in view of Vaidya et al. This rejection is respectfully traversed for the following reasons.

The PTO has continued to rely upon Iijima for basic structural features of the claimed invention. Iijima teaches utilization of a substrate positioning structure in the form of a substrate block that has internal coolant flow. Iijima fails to teach an IBAD apparatus that incorporates a substrate block containing both gaseous coolant delivery channels and liquid coolant channels. Accordingly, the PTO has relied upon Vaidya et al.

Vaidya et al. disclose a coating apparatus for chemical vapor depositing material such as Co-Ni on a plastic film to form a recording medium. Vaidya et al. disclose a substrate block along which a substrate is translated, the substrate block incorporating internal coolant channels. The embodiments depicted in Vaidya et al. rely upon a separate, gas injection nozzle for the injection of gas along a back side of the substrate to reduce friction. See nozzle 30 shown in Figs. 5 and 6. Vaidya et al. also disclose a modification, in which the substrate block is modified such that the gas is passed therethrough, rather than a separate nozzle. Vaidya et al. teach that such a modification may be carried out by forming the substrate block of a porous sintered metal, porous carbon, or porous ceramic. See column 6, first full paragraph.

Foremost, Applicants respectfully submit that the incorporation of a separate, stand alone nozzle such as nozzle 30 shown in Figs. 5 and 6 of Vaidya would not even remotely meet all features of the claimed invention. Furthermore, modification of the substrate block of Iijima et al. to be formed of a porous metal, ceramic or carbon, would destroy the hermetic seal described by Iijima et al. Such a modification still would not result in the claimed invention that calls for internal liquid coolant channels and internal gaseous coolant delivery channels. Furthermore, Iijima unequivocally teaches the provision of a hermetically sealed cooling device to enable cooling through independent control of the device relative to the deposition chamber. A break of the hermetic seal by modifying the cooling block so as to be porous would naturally result in the

loss of the liquid coolant utilized by Iijima (liquid nitrogen), and potential destruction of the layer being deposited.

Furthermore, the attention of the PTO is drawn to the Rule 132 Declaration enclosed herewith, provided by Dr. Selvamanickam. The Declaration is self explanatory, and further evidences the non-obviousness of the claimed invention. In it, Dr. Selvamanickam describes in detail comparative testing to show the surprising and notable improvement in deposition quality provided by the claimed apparatus, which incorporates a substrate block containing both internal liquid coolant channels and gaseous coolant delivery channels.

For at least the forgoing reasons, Applicants respectfully submit that the claimed invention would not have obvious over Iijima in view of Vaidya et al. Accordingly, reconsideration and withdrawal of the Section 103 rejection are respectfully requested.

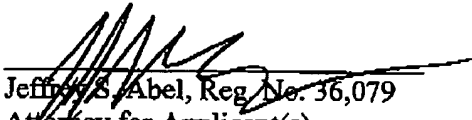
Applicant(s) respectfully submit that the present application is now in condition for allowance. Accordingly, the Examiner is requested to issue a Notice of Allowance for all pending claims.

Should the Examiner deem that any further action by the Applicants would be desirable for placing this application in even better condition for issue, the Examiner is requested to telephone Applicants' undersigned representative at the number listed below.

The Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 50-3797.

Respectfully submitted,

11/8/06
Date


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